

Application Serial No. 10/588,825
Reply to Office Action of April 21, 2009

PATENT
Docket: CU-4999

REMARKS

In the Office Action, dated October 2, 2008, the Examiner states that Claims 14-32 are pending and rejected.

Claims 14-32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of either US 7,499,135 or US 2006/0082719. Applicant respectfully disagrees with and traverses this rejection. The claims of the present application, U.S. Patent No. 7,499,135, and U.S. 2006/0082719 are shown below.

Claim 14 of the present application is shown below:

"A liquid crystal display comprising:

a UV curable liquid crystal side substrate having a first substrate, an electrode layer formed on the first substrate, a first alignment layer formed on the electrode layer, and a UV curable liquid crystal layer with a UV curable liquid crystal fixed and formed on the first alignment layer; and

a counter substrate having a second substrate, and electrode layer formed on the second substrate having a second substrate, and a second alignment layer formed on the electrode layer,

wherein the UV curable liquid crystal layer of the UV curable liquid crystal side substrate and the second alignment layer of the counter substrate are disposed so as to face each other such that a ferroelectric liquid crystal is sandwiched between the UV curable liquid crystal side substrate and the counter substrate."

Moreover, Claim 1 of US 7,499,135 is shown below:

"A liquid crystal display comprising a first alignment substrate having a first substrate, a first electrode layer formed on the first substrate and a first alignment layer formed on the first electrode layer, and a second alignment substrate having a second substrate, a second alignment layer formed on the second electrode layer, and a reactive liquid crystal layer formed on the second alignment layer, produced by fixing a reactive liquid crystal including a polymerizable liquid crystal material and showing a nematic phase;

disposed such that the first alignment layer and the reactive liquid crystal layer face with each other, with a ferroelectric liquid crystal interposed between the first alignment substrate and the second alignment substrate;

wherein the second alignment layer has a column structure with a plate-like molecule

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having a photo direction of the plate-like molecule aligned in a certain direction, and it is a columnar alignment layer having an alignment function and a polarizing function.”

Also, Claims 1 and 3 of US 2006/0082719 are shown below:

Claim 1 - “A liquid crystal display comprising a first alignment substrate having a first substrate, a first electrode layer formed on the first substrate and a first alignment layer formed on the first electrode layer, and a second alignment substrate having a second substrate, a second electrode layer formed on the second substrate, and a second alignment layer formed on the second electrode layer, disposed such that the first alignment layer and the second alignment layer face with each other, with a ferroelectric liquid crystal interposed between the first alignment layer and the second alignment layer, wherein at least one of the first alignment layer and the second alignment layer is a columnar alignment layer having a column structure with a plate-like molecule laminated with a normal direction of the plate-like molecule aligned in a certain direction.”

Claim 3 - “The liquid crystal display according to claim 1, wherein the first alignment layer and the second alignment layer are the columnar alignment layer, the normal direction of the plate-like molecule of the first alignment layer and the normal direction of the plate-like molecule of the second alignment layer are disposed substantially perpendicularly, and a reactive liquid crystal layer produced by fixing a reactive liquid crystal including a polymerizable liquid crystal material and showing a nematic phase on a counter surface of the first alignment layer or the second alignment layer is provided.”

When the respective claims of the present application, US Patent No. 7,499,135, and US 2006/0082719 are compared, the present application is distinguished from the others in the following aspects: In the present application, neither the first alignment layer nor the second alignment layer are the columnar alignment layers, whereas the second alignment layer is the columnar alignment layer in US Patent No. 7,499,135, and either of the first or the second alignment layer is the columnar alignment layer in US 2006/0082719.

In the specification of the present application, a rubbing layer or a photo alignment layer is cited as an example of the first and second alignment layers. However, the present application is completely silent regarding the first and second

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alignment layers being the columnar alignment layers.

On the other hand, in US Patent No. 7,499,135 and US 2006/0082719, an alignment layer which aligns the ferroelectric liquid crystals by a simple method is obtained by using the columnar alignment layer and without carrying out a rubbing treatment or a photo alignment treatment. Further in US Patent No. 7,499,135, since the columnar alignment layer has the alignment function and the polarizing function, it is not necessary to provide a polarizing plate separately.

Therefore, Applicant respectfully asserts that the presently claimed invention, which comprises no columnar alignment layer, is not obvious in view of US Patent No. 7,499,135 and US 2006/0082719, which require the columnar alignment layer as an essential. Since the columnar alignment layer of the cited prior art is essential, Applicant respectfully asserts that the prior art teaches away from an invention not including a columnar alignment layer.

In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,



Attorney for Applicant
Eric D. Babych
c/o Ladas & Parry LLP
224 South Michigan Avenue
Chicago, Illinois 60604
(312) 427-1300
Reg. No. 57,542

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